**Safety Evaluation by the DOE Regulatory Unit
of Proposed Authorization Basis Amendment Request,
ABCN-W375-00-00038
to the Safety Requirements Document of
the River Protection Project Waste Treatment Plant Project
(Contract DE-AC27-96RL13308)**

1.0 INTRODUCTION

The River Protection Project Waste Treatment Plant (RPP-WTP) is a facility to vitrify radioactive tank waste at the Hanford Site. By the BNFL letter (CCN014239) from A. J. Dobson, to D. C. Gibbs, RL, "Contract No. DE-AC27-96RL13308-W375-Request to Amend the Authorization Basis Impacting the Safety Requirements Document (SRD), ABCN-W375-00-00038, Compaction Standards," dated June 26, 2000, the contractor submitted an authorization basis amendment request (ABAR) to add three standards to SRD Safety Criterion 4.1-2. The three standards address the laboratory and field testing requirements for soil compaction and establish controls for assessing structural fill for important-to-safety (ITS) structures of the RPP-WTP facility.

The amendment was requested as a result of the contractor's continuing design development of the RPP-WTP. Based on its most current design information, the contractor considers that the addition of the three standards will allow it to design the facility more effectively without adversely affecting the safety to workers, co-located workers, and the public.

2.0 BACKGROUND

As a part of the RPP-WTP projects standards approval package, the SRD is an authorization basis document that prescribes the set of radiological, nuclear and safety standards and requirements that will be used to design, construct and operate the vitrification facility. This set of standards and requirements is required to ensure adequate protection of the health and safety of workers and the public from radiological, nuclear, and process hazards and hazardous situations posed by operation of the RPP-WTP facility. A review of the existing authorization basis by the contractor found that the requirements for compaction of soils used as structural backfill are not included. The addition of the proposed standards to the contractor's authorization basis represents an increase in commitment by the contractor to the safety of workers and the public.

3.0 EVALUATION

Safety Criterion 4.1-2 is a broad safety criteria that requires, in part, "terms and processes shall be designed using sound engineering/scientific principles and appropriate standards." Also, it requires that, "where generally recognized codes and standards are used, they shall be supplemented or modified as necessary to assure a quality product in keeping with the required

safety functions." The amendment proposes to add the following implementing standards to the SRD Safety Criterion 4.1-2:

- ASTM D3740, Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

- ASTM D2922, Standard Test Method for Laboratory Determination of Moisture Content of Soil.

- ASTM D3017, Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods.

These implementing standards have been identified and selected in accordance with the contractor's approved standards selection process described in the Integrated Safety Requirement Plan. This process ensures that the new implementing standards meet the criteria for approval of standards described in Section 3.3.1 of DOE/RL-96-0003, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor*. The three standards address the laboratory and field testing requirements for soil compaction and establish controls for assessing structural fill for ITS structures of the RPP-WTP facility. These standards and those referenced within them provide industry-accepted methods for performing laboratory and field tests of soils. The methods and procedures contained within these standards enable testing agencies to obtain consistent results under controlled conditions. The soil qualified by the tests associated with the three standards is used to demonstrate that applied structural loads can be supported without detrimental effects to ITS structures. These standards provide the criteria for both in situ and backfill soils that support ITS structures.

The addition of three standards enhances the safety of the RPP-WTP facility by adding implementing standards to a safety criterion in an area where implementing standards did not exist previously. The Regulatory Unit (RU) finds the amendment request acceptable.

4.0 CONCLUSION

On the basis of the considerations described above, the RU has concluded that there is reasonable assurance that the health and safety of the public, the workers, and the environment will not be adversely affected by this proposed amendment. The proposed amendment complies with applicable laws, regulations, and requirements, conforms with DOE-stipulated top-level safety standards and principles, and provides adequate safety. Accordingly, this review concludes that the proposed amendment to the authorization basis is acceptable.